4.15 PUBLIC UTILITES AND ENERGY

4.15.1 INTRODUCTION

This section describes the existing utilities for the project area and analyzes the potential for the project to affect water supply and the water distribution system; wastewater collection; conveyance; and treatment systems; and solid waste services. This section also describes the potential effects on energy conservation with project implementation. **Section 4.10, Hydrology and Water Quality**, provides information regarding groundwater resources for Fremont and the project's effect on that resource. **Section 4.10** also describes the proposed storm drain facilities for the project and the potential environmental effects related to that system. Please refer to that section of this ~~Recirculated Draft~~Final EIR for a full description of those resources.

Information on utilities and service systems was obtained from site visits, the Fremont General Plan, and a water supply assessment (WSA) prepared for the October 2009 Draft EIR.

For the purposes of this analysis, Scenario 1 (the construction of up to 500 single-family homes) or Scenario 2 (the construction of up to 448 single-family homes and 72 apartments) was used depending on the projected demand on the specific utility system. For the analysis of impacts to water supply, Scenario 1 was used because it would generate greater water demands than Scenario 2. For the analysis of impacts to wastewater collection systems, Scenario 2 was used because it would generate more wastewater than Scenario 1. Both scenarios were considered to have the same level of impact to solid waste services, as the generation of solid waste under both options would be similar. For the analysis of impacts to energy conservation, Scenario 1 was used because it would have a slightly greater energy demand than Scenario 2.

Incorporation of the project applicant's new mitigation measure, eliminating the borrow of 300,000 cubic yards of soil from the area southwest of Ardenwood Boulevard, as described in **Chapter 3, Project Description,** has not resulted in any changes to this section. Changes as a result of comments received on the Recirculated Draft EIR and staff-initiated changes (i.e., editorial and minor clarification corrections) are shown throughout this section in strikethrough/ underline format.

4.15.2 EXISTING CONDITIONS

Wastewater

Wastewater collection and treatment services are provided by the Union Sanitary District (USD), an independent wastewater district with a 60.2 square mile service area that includes the cities of Fremont, Newark, and Union City, and serves a population of 333,648 persons. Approximately 97 percent of the USD wastewater connections serve domestic/residential units, 1.5 percent serves commercial uses and 1.2 percent serves industrial uses. USD currently treats approximately 24.5 million gallons per day (mgd) of wastewater. The majority of treated wastewater discharges to San Francisco Bay via the East Bay Discharger Authority pipeline facilities.

The USD Alvarado Treatment Plant in Union City, approximately 2.5 miles northwest of the project area provides wastewater treatment and disposal services for Fremont. The Alvarado Treatment Plant has undergone several upgrades over the past decade, and has a current capacity of 38 mgd.[1] The average daily wastewater treated by the plant in 2007 was 26.6 mgd, which is approximately 71 percent of its total capacity.[2]

Treated wastewater is pumped into the East Bay Dischargers Authority (EBDA) outflow pipe and carried out into San Francisco Bay north of the San Mateo Bridge. USD is entitled to a discharge capacity allocation of 42.9 mgd into the Bay.[3]

The following existing sanitary sewer lines exist in the project area:

- A 24-inch diameter sewer under Ardenwood Boulevard, running north from the Paseo Padre Parkway and Ardenwood Boulevard intersection;
- A 12-inche diameter sewer under Ardenwood Boulevard, running south from the Paseo Padre Parkway and Ardenwood Boulevard intersection;
- A 21-inch diameter sewer under Paseo Padre Parkway, running west from the Paseo Padre Parkway and Ardenwood Boulevard intersection;

[1] Arbolante, Rollie, P.E., Coach/Senior Engineer, Union Sanitary District. 2008 (June 16). Personal communication with Jennifer Gallerani, CirclePoint, regarding Patterson Ranch wastewater generation rates.

[2] Union Sanitary District. Available at: < www.unionsantary.com>. Accessed June 16, 2008.

[3] City of Fremont General Plan 2030. Public Facilities Element. 1991.

- A 24-inch diameter sewer under Ardenwood Boulevard, running northeast from the Paseo Padre Parkway and Ardenwood Boulevard intersection; and
- A 24-inch diameter sewer under Tupelo Street, running north from the Paseo Padre Parkway and Tupelo Street intersection.

Water Supply

Fremont is served by the Alameda County Water District (ACWD). Established in 1914, the ACWD service area has grown to 100 square miles that includes Fremont, Newark, and Union City, serving a total population of over 320,000. ACWD prepared an Urban Water Management Plan (UWMP) in 2005 with an update in April of 2006. Residential customers use approximately 70 percent of the water supplied by ACWD, with the remaining 30 percent used by commercial, industrial, institutional, and large landscape customers. The District estimates total use of 74,600 acre-feet during fiscal year 2006-07, the most recent year that data were available.[4]

ACWD relies upon both imported and local water supply as described in **Table 4.15-1, Overview of Contracts and Permits for ACWD's Existing Water Supplies** and **Table 4.15-2, ACWD Historical Water Supply Utilization (af/yr)**. The percentage of water from each source varies annually based on availability within the maximum supply contract amounts. Imported water constitutes 55 percent of the annual average supplies, with roughly 64 percent of imported water from the State Water Project (SWP) and 36 percent from San Francisco Regional Water System. Local sources are 45 percent of the overall supplies. Local sources include 64 percent from groundwater pumped from the Niles Cone Groundwater Basin under the ACWD service area supplied through the Alameda Creek watershed, 15 percent from Newark Desalination Facility of brackish groundwater, and 21 percent from surface runoff to the Del Valle Reservoir. The project does not include wells that would utilize local groundwater in addition to water provided by ACWD. In addition to average annual supplies the ACWD has the capacity for use of supplemental stored water during drought years of approximately 13,500 acre-feet per year (af/yr) from the Semitropic Water Storage District that has a total of 115,000 af of banked water to date. The Semitropic storage is not additional supply; it is regarded as replacement water to normal supplies during drought years. ACWD has

[4] The majority of the information regarding water service has been supplied by the ACWD through its Water Supply Assessment (WSA) for Patterson Ranch, April 2008, and through the *Alameda County Water District Urban Water Management Plan 2006-2010* (UWMP), as adopted on December 15, 2005 and amended on April 27, 2006.

identified uncertainties with regard to recovery of water from the Semitropic Banking Program (described further in **Chapter 5, Cumulative Impacts**, which have created a risk that under certain critical dry year conditions, ACWD may not be able to recover 100 percent of its contractual capacity from Semitropic storage.

Table 4.15-1 Overview of Contracts and Permits for ACWD's Existing Water Supplies

Supply Component	Category	Description	Maximum Quantity (af/yr)	Ever Used
Imported Supplies				
State Water Project	Contract	In 1961, ACWD signed an agreement with the California State Department of Water Resources for a maximum annual amount of 42,000 af/yr from the SWP. SWP water is delivered via the South Bay Aqueduct. This contract expires in 2035.	42,000	Yes
San Francisco Regional Water System	Contract	In 1984 ACWD (and other Bay Area agencies) signed a Settlement Agreement and Master Water Sales Agreement with San Francisco. ACWD supply assurance under an individual water supply contact is 12 mgd (approximately 13,400 af/yr). In 1994 ACWD and San Francisco executed an amendment to the contract which provides an additional 1.76 mgd (approximately 2000 af/yr). This contract was extended in June 2009.	15,344	Yes
Local Supplies				
Alameda Creek Diversions for Groundwater Recharge	Water-rights permit	ACWD received a water rights permit from the SWRCB in 1949 (permit no. 8428) to appropriate up to 40,000 af/yr of water from Alameda Creek for groundwater storage and replenishment.	40,000	Yes
Del Valle Reservoir	Water-rights permit	ACWD received a water rights permit from the SWRCB in 1958 (permit no. 11320) to appropriate up to 60,000 af/yr of unappropriated water from Arroyo Del Valle in the Alameda Creek Watershed for storage and later beneficial use.	60,000	Yes
Groundwater Storage in Niles Cone Ground-water Basin - Desalination of Brackish Ground-water	Other	ACWD manages and protects the Niles Cone Groundwater Basin for water supply under its Groundwater Management Policy (adopted 1989, amended 2001). This Policy is based on the statutory authority granted to ACWD under the County Water District Law; the Replenishment Assessment Act of ACWD; and local well ordinances.	N/A	Yes
Banking / Transfers				
Semitropic Groundwater Banking Program	Contract	In 1996 and in 2001 entered into agreements with Semitropic Water Storage District for 150,000 af of combined groundwater storage capacity for banking of ACWD's excess SWP supplies in wet years. The banked water is to be returned to ACWD in dry years. These banking agreements expire in 2035.	13,500 (maximum return quantity during critically dry years)	Yes

Source: ACWD 2008.

Table 4.15-2 ACWD Historical Watery Supply Utilization (af/yr)

Fiscal Year	SWP supplies used at ACWD facilities	Del Valle	San Francisco Regional Water	Newark Desal Facility	Net Local Groundwater Recharge (less evaporation and other losses)	Total In-District Water Supply	SWP Supply delivered to Semitropic for Storage
93-94	21,600	5,000	12,200	-	28,500	67,300	-
94-95	16,100	4,200	13,000	-	35,900	69,200	-
95-96	18,600	5,300	12,200	-	27,600	63,700	-
96-97	7,700	15,900	14,700	-	25,300	63,600	6,200
97-98	12,900	10,600	13,700	-	58,000	95,200	10,000
98-99	20,800	5,300	13,600	-	33,200	72,900	18,780
99-00	25,200	3,800	13,800	-	26,900	69,700	7,230
00-01	26,400	200	13,000	-	31,000	70,600	7,250
01-02	21,900	4,600	13,500	-	32,100	72,100	83
02-03	17,600	7,400	14,000	-	31,400	70,400	20,800
03-04	18,500	6,700	13,700	2,600	30,700	72,200	4,000
04-05	18,800	6,000	11,800	3,900	38,700	79,200	9,300
05-06	15,600	7,700	11,700	2,100	31,100	68,200	41,540
06-07	13,800	11,000	15,300	2,800	26,000	68,900	11,936

Source: ACWD 2008.

As evidenced by the information in the tables, water supply is a local, regional, and even statewide issue. In order to help coordinate and integrate water supply planning issues, ACWD participates in water supply planning programs, including: (1) the Integrated Regional Water Management Plan in the Niles Cone Groundwater Basin (June 2005), in cooperation with the USD, East Bay Regional Park District, and Alameda County Flood Control and Water Conservation District; (2) the Bay Area Integrated Regional Water Management Plan: Water Quality and Water Supply Element, in participation with ten other Bay Area water agencies; and (3) Alameda Creek watershed planning, in partnership with several stakeholder groups. ACWD is also a signatory to a Memorandum of Understanding (MOU) on Urban Water Conservation, which commits ACWD to implementing water conservation Best Management Practices (BMPs), with bi-annual status reports submitted to the California Urban Water Conservation Council.

The source water supply is treated to meet and surpass all state and federal drinking water standards before being supplied to ACWD's customers. ACWD operates the following two water treatment plants that treat SWP and Del Valle Reservoir water: Mission San Jose Water Treatment Plant and Water Treatment Plant Number 2. The Newark Desalination Plant, which has a capacity of 5 million gallons per day (mgd), treats brackish groundwater to remove salts and impurities, and the Blending Facility blends high-quality San Francisco-supplied water with local fresh groundwater. Water is distributed to customers through a network of over 800 miles of water mains.

ACWD plans to develop a recycled water Phase I project with USD to provide up to 1,600 af/yr of recycled water by the year 2020 and there is a potential for a later Phase II of 1,000 af/yr. Recycled water is for non-potable use, primarily landscape irrigation and industrial use. In addition to coordination with USD, ACWD has entered into preliminary discussions to connect to recycled water resources from the wastewater treatment facility in north San Jose. If final agreements are secured, ACWD could potentially utilize recycled water resources as early as 2015, but in any case recycled water is planned to be available no later than 2020. The planned service area for distribution of recycled water from San Jose would be in the same area as the system coordinated with USD. The UWMP identifies the planning for this system with the most recent study completed in 2003.

A WSA was prepared for the October 2009 Draft EIR by the ACWD for Fremont in April 2008 in accordance with Senate Bill (SB) 610 and is attached as **Appendix ~~H~~ G** to this ~~Recirculated Draft~~Final EIR. The WSA discussed the operational restrictions on the SWP by the "2007 Wanger Decision" regarding the protection of Delta Smelt under the Endangered Species Act. However, since the completion of the WSA, the project has been revised as described in **Section 3.0 Project Description** to reduce the number of housing units from 840 to 500 units with Scenario 1 (520 units with Scenario 2), and remove the commercial, community park, and school development elements. Other events have also affected the reliability of future water supplies as discussed below, and in **Section 4.8, Greenhouse Gas Emissions~~ and Energy~~**.

Future Demand Projections

The following future water demand information has been derived from the Paterson Ranch WSA prepared for the October 2009 Draft EIR by ACWD in April 2008. Water supply demands of the Patterson Ranch Planned District project were not accounted for in the 2006-2010 Urban Water Management Plan (UWMP) forecast of future water demands. However, the overall demands are within Fremont's growth projections as estimated by the General Plan~~ and long-term water demand planning for the entire City~~.

In order to estimate the October 2009 Draft EIR water demands, ACWD used the same methodology as used in the 2006-2010 UWMP. New data applicable to Scenario 1 and Scenario 2, was derived from the WSA prepared for the October 2009 Draft EIR. Based on these data, which were reviewed and approved by the ACWD, the projected average annual water demand of Scenario 1 would be approximately 283 af/yr. The projected annual water demand for Scenario 2 would be 279 af/yr, approximately 4 af/yr less than Scenario 1, due to the fact that the estimated "unit demand" per apartment is less than that of a single-family home. As such, Scenario 1 was used in this analysis because it would generate greater water demands than Scenario 2. **Table 4.15-3, Estimated Water Demands for Scenario 1** shows the breakdown of the project's demand estimates according to the ACWD. As noted in the table, an additional 8 percent "Distribution Loss" is included in the calculated projected demand, which includes water for fire fighting suppression, distribution system flushing, distribution system and service line leaks, etc.

Table 4.15-3 Estimated Water Demands for Scenario 1

Land Use Category	Planning Unit	Units or SQ. FT	Unit Demand (gpd)[a]	Projected Demand (gpd)
Description				
Residential	Single family homes (2,000-5,000 ft^2 lot size)	178 Units	278	49,484
	Single family homes (5,000 – 6,000 ft^2 lot size)	322 Units	357	114,954
Other[b]	Neighborhood Parks	644,688 ft^2	0.106	68,337
Subtotal				232,775
Distribution system losses (8%)[c]				20,241
Total Projected Demand (gpd)				253,016
Total Projected Demand (mgd)				0.253
Total Projected Demand (af/yr)[d]				283

Estimated Water Demand for Scenario 2 would be 279 af/yr.

Estimated Water Demand has been refined since 2008 WSA, original estimate was 560 acre feet per year

a Unit demands were developed by ACWD as part of the demand forecast for the ACWD's 2006-2010 Urban Water Management Plan, and reflect the average unit demand within the ACWD service area for each of the land use categories.

b The "Other" land use category represents 14 acres of residential neighborhood parks for a total of 14 acres = 644,688 ft2.

c Distribution system losses are calculated as the difference between total production and total measured consumption and include water for fire fighting suppression, distribution system flushing, distribution system and service line leaks, etc.

d 1 mdg is roughly 1,120 af/yr

Source: ACWD 2008, revised 2010.

According to the WSA, ACWD's water demands (excluding the project) would increase by approximately 4,800 af/yr between 2010 and 2030. As discussed previously, it was estimated that Scenario 1 would increase demands by an additional 283 af/yr, resulting in a 6 percent increase in the District's projected demand growth.

A comment letter was received from the ACWD on July 28, 2010 (see Comment Letter R-1 in Volume II of this Final EIR), which includes more current water supply and demand information then the information presented in the Recirculated Draft EIR. This new information is shown below in **Tables 4.15-4**, **4.15-5**, and **4.15-6**. These tables include the demand for the project as well as the proposed mitigation of 300 acre-feet of additional Semitropic Setback (see **Mitigation Measure PU-2**).

As shown in **Table 4.15-4**, under normal year conditions, ACWD's water supplies would be sufficient to meet the future demands in the service area, including the project's demands. However, as shown in **Table 4.15-5**, under critical year conditions, ACWD's water supplies would not be sufficient to meet the future demands in the service area, with or without the project.

Table 4.15-4 Water Supply and Demand Comparison: Normal Year

SUPPLY/DEMAND	2010	2015	2020	2025	2030
Total Supply	74,400	74,400	76,000	76,000	76,000
Total Demand	64,700	69,000	70,300	71,400	72,900
Difference	9,700	5,400	5,700	4,600	3,100

Notes:
All values rounded to the nearest 100 acre feet.
Source: ACWD 2010.

Table 4.15-5 Water Supply and Demand Comparison: Critical Year

SUPPLY/DEMAND	2010	2015	2020	2025	2030
Total Supply	58,900	61,300	63,800	62,800	63,500
Total Demand	60,400	64,700	66,000	67,100	68,600
Difference	(1,500)	(3,400)	(2,200)	(4,300)	(5,100)

Notes:
All values rounded to the nearest 100 acre feet.
Source: ACWD 2010.

ACWD has indicated that it is currently updating its Integrated Resources Plan and Urban Water Management Plan. These will include a revised long-term district-wide demand forecast and revised assumptions regarding the reliability of ACWD's supplies from the State Water Project. The District will use the most recent land use planning forecasts, as well as recent legislation requiring reductions in per capita water use. ACWD has stated that if there will be an imbalance between demands and supplies, ACWD may require additional mitigation for the project before providing written verification of water supply adequacy needed for final map approval.

Table 4.15-6, Water Supply and Demand Comparison: Multiple Dry Year provides a summary of the projected supply availabilities under a long-term (5 year) drought for future (2026-2030) demand conditions. This multiple year drought sequence is based on the 1929-1933 historical hydrologic conditions, which represents the most severe 5-year drought on record. The results from this analysis indicate ACWD's water supplies may be significantly reduced during a multiple-year drought. However, the supply reduction would not be as severe as during a single, critically dry year condition. As with the single dry year condition, both local groundwater storage and off-site groundwater storage within the Semitropic Groundwater Banking System will play key roles in offsetting shortfalls in the ACWD's other local and imported supplies. During critically dry years, the available return capacity from Semitropic is less than the demand and ACWD anticipates a shortage. In less severe year types such as the multiple dry year scenario, ACWD has more than sufficient capacity and will retrieve the specific quantity needed from Semitropic, resulting in no difference between supply and demand.

Table 4.15-6 Water Supply and Demand Comparison: Multiple Dry Year

SUPPLY/DEMAND	2026	2027	2028	2029	2030
Total Supply	67,400	66,800	63,000	63,100	64,500
Total Demand	67,400	66,800	63,000	63,100	64,500
Difference	0	0	0	0	0

Notes:
All values rounded to the nearest 100 acre feet.
Source: ACWD 2010.

~~**Table 4.15-4, Patterson Ranch 2008 WSA Projected Normal Year Supply** and **Table 4.15-5, Patterson Ranch 2008 WSA Projected Dry Year Supply** provide a comparison of normal year and critical year water supply and demands under future levels of development (in 5-year increments from 2010 through 2030), both with~~

and without the project, under 2007 SWP reliability estimates. Under normal year conditions, ACWD's water supplies would be sufficient to meet the future demands in the service area, including the project's demands. However, under critical year conditions, ACWD's water supplies would not be sufficient to meet the future demands in the service area, with or without the project.

Table 4.15-4 Patterson Ranch 2008 WSA Projected Normal Year Supply (2007 DWR Reliability Assumptions in af/yr)

SUPPLY YEAR	2010	2015	2020	2025	2030
Imported Supplies					
Imported Supplies					
- State Water Project	26,600	26,900	27,200	27,500	27,700
- San Francisco Regional	15,000	15,000	15,000	15,000	15,000
Total Imported Supplies	41,600	41,900	42,200	42,500	42,700
Local Supplies					
- Groundwater Recharge	21,400	21,400	21,400	21,400	21,400
- Groundwater Storage	0	0	0	0	0
- Del Valle Release	7,100	7,100	7,100	7,100	7,100
- Desalination	5,100	5,100	5,100	5,100	5,100
- Recycled Water	0	0	1,600	1,600	1,600
Total Local Supplies	33,600	33,600	35,200	35,200	35,200
Banking/Transfers					
- Semitropic Banking	*N/A – Not needed to meet normal year demands*				
TOTAL SUPPLY	75,200	75,500	77,400	77,700	77,900
TOTAL DEMAND (w/out Project)	73,600	74,700	75,800	76,300	76,900
TOTAL DEMAND (with Project)	73,883	74,983	76,083	76,583	77,183

Notes: All figures are in acre feet.
Source: ACWD 2008; CirclePoint 2010.

~~ACWD has indicated that it is currently updating its Integrated Resources Plan and Urban Water Management Plan. These will include a revised long-term district-wide demand forecast and revised assumptions regarding the reliability of ACWD's supplies from the State Water Project. The District will use the most recent land use planning forecasts, as well as recent legislation requiring reductions in per capita water use. ACWD has stated that if there will be an imbalance between demands and supplies, ACWD may require additional mitigation for the project before providing written verification of water supply adequacy needed for final map approval.~~

~~Table 4.15-5 Patterson Ranch 2008 WSA Projected Dry Year Supply (2007 DWR Reliability Assumptions in af/yr)~~

~~SUPPLY YEAR~~	~~2010~~	~~2015~~	~~2020~~	~~2025~~	~~2030~~
~~Imported Supplies~~					
~~Imported Supplies~~					
~~– State Water Project~~	~~2,600~~	~~2,700~~	~~2,800~~	~~2,900~~	~~2,900~~
~~- San Francisco Regional~~	~~11,700~~	~~13,700~~	~~14,100~~	~~12,700~~	~~13,100~~
~~Total Imported Supplies~~	~~14,300~~	~~16,400~~	~~16,900~~	~~15,600~~	~~16,000~~
~~Local Supplies~~					
~~– Groundwater Recharge~~	~~15,600~~	~~15,600~~	~~15,600~~	~~15,600~~	~~15,600~~
~~- Groundwater Storage~~	~~10,000~~	~~10,000~~	~~10,000~~	~~10,000~~	~~10,000~~
~~– Del Valle Release~~	~~100~~	~~100~~	~~100~~	~~100~~	~~100~~
~~– Desalination~~	~~5,600~~	~~5,600~~	~~5,600~~	~~5,600~~	~~5,600~~
~~– Recycled Water~~	~~0~~	~~0~~	~~1,600~~	~~1,600~~	~~1,600~~
~~Total Local Supplies~~	~~31,300~~	~~31,300~~	~~32,900~~	~~32,900~~	~~32,900~~
~~Banking/Transfers~~					
~~- Semitropic Banking~~	~~13,500~~	~~13,500~~	~~13,500~~	~~13,500~~	~~13,500~~
~~TOTAL SUPPLY~~	~~59,100~~	~~61,200~~	~~63,300~~	~~62,000~~	~~62,400~~
~~TOTAL DEMAND (w/out Project)~~	~~69,300~~	~~70,400~~	~~71,500~~	~~72,000~~	~~72,600~~

SUPPLY YEAR	2010	2015	2020	2025	2030
TOTAL DEMAND (with Project)	69,583	70,683	71,783	72,283	73,883

Notes: All figures are in acre feet.
Critical Dry Year conditions are based on projected water supply availability under 1977 drought conditions.
Source: ACWD 2008; CirclePoint 2010.

Table 4.15-6, Patterson 2008 WSA Projected Multiple Dry Year Supply – Years 2026 – 2030 provides a summary of the projected supply availabilities under a long-term (5 year) drought for future (2026-2030) demand conditions. This multiple year drought sequence is based on the 1929-1933 historical hydrologic conditions, which represents the most severe 5-year drought on record. The results from this analysis indicate, under the 2007 SWP reliability assumptions, ACWD's water supplies may be significantly reduced during a multiple-year drought. However, the supply reduction would not be as severe as during a single, critically dry year condition. As with the single dry year condition, both local groundwater storage and off-site groundwater storage within the Semitropic Groundwater Banking System will play key roles in offsetting shortfalls in the ACWD's other local and imported supplies.

Table 4.15-5 Patterson Ranch 2008 WSA Projected Dry Year Supply (2007 DWR Reliability Assumptions in af/yr)

SUPPLY YEAR	2026	2027	2028	2029	2030
Imported Supplies					
Imported Supplies					
- State Water Project	8,200	21,800	10,500	13,700	16,400
- San Francisco Regional	15,300	15,300	13,100	15,300	15,300
Total Imported Supplies	23,500	37,100	23,600	29,000	31,700
Local Supplies					
– Groundwater Recharge	12,700	12,100	9,900	19,800	14,000
– Groundwater Storage	9,100	0	10,000	0	3,300
- Del Valle Release	900	5,200	1,000	3,400	1,000
– Desalination	5,000	5,000	2,000	1,900	2,600
- Recycled Water	1,600	1,600	1,600	1,600	1,600
Total Local Supplies	29,300	23,900	24,500	26,700	22,500

SUPPLY YEAR	2026	2027	2028	2029	2030
Banking/Transfers					
- Semitropic Banking	14,400	22,100	15,700	17,500	19,000
TOTAL SUPPLY	67,200	83,100	63,800	73,200	73,200
TOTAL DEMAND (w/out Project)	72,400	71,600	67,400	67,400	68,500
TOTAL DEMAND (with Project)	72,683	71,883	67,683	67,683	68,783

Notes: Critical Dry Year conditions are based on projected water supply availability under 1929-1933 drought conditions.
Source: ACWD 2008; CirclePoint 2010.

Recycled Water

Although ACWD does not currently have a recycled water supply, their long-term supply strategy includes a recycled water program projected for implementation by 2020, which will provide up to 1,600 af/yr of non-potable supply (e.g. landscape irrigation and industrial process water). The program will be a joint project between ACWD and the USD.

Recycled water distribution pipelines would be separate from the ACWD's existing potable distribution system so as not to affect existing potable supply operations. The volume of recycled water produced would be the same in drought years as in normal years. Because demand for water is highest in the summer months, the use of recycled water for some purposes (irrigation, watering of yards, and landscaping) would reduce demands on the current water supply, and would help meet peak monthly and daily production capacity needs.

Stormwater Pollution Prevention

The Fremont Environmental Services Division implements the stormwater program. The program was established in 1991 as a requirement of the National Pollution Discharge Elimination System (NPDES) permit (for Alameda County) to minimize stormwater pollution and improve the water quality of Fremont's local waterways.

The project area contributes stormwater to the Zone 5, Crandall Creek (K-line channel) drain system, a natural creek drainage system managed by the Alameda County Flood Control and Water Conservation District. Specifics of the current site

hydrology, including the regional and local setting of nearby channels and ponds are discussed in the **Hydrology and Water Quality** section of this ~~Recirculated Draft~~Final EIR (**Section 4.10**).

Municipal Solid Waste

Allied Waste Services, Fremont's franchise service hauler, provides recycling and organic collection services to residents and businesses in Fremont. The Fremont Municipal Code (FMC) specifies that municipal waste is collected at least once per week for all properties in Fremont. Recyclables collection is mandatory for all single-family and multi-family ~~residencies~~residences and yard waste collection is mandatory at single-family residences. Collected solid waste, organics and recyclables are hauled to the Fremont Recycling and Transfer Station (FRTS).

Materials hauled to the FRTS are diverted from landfills where possible through recycling and composting. The remaining municipal solid waste is shipped to various landfills in California, with 90 percent of the material going to the Tri Cities Recycling & Disposal Facility in Fremont.

In 2006, 199,567 tons of municipal solid waste from Fremont was disposed of in landfills.[5] Fremont's solid waste is shipped out to 17 different landfills, with approximately 93 percent of the solid waste outflow maintained within Alameda County, instead of being outsourced to adjacent counties (CIWMB 2008). The primary landfills used for Fremont are (1) Tri Cities Recycling & Disposal Facility, (Fremont), (2) Vasco Road Sanitary Landfill, (3) Newby Island Landfill (Milpitas), (4) Altamont Landfill & Resource Recovery. Tri Cities Recycling & Disposal Facility is currently nearing maximum capacity, while Altamont Landfill & Resource Recovery and Vasco Road Sanitary Landfill operate at 26 percent and 69 percent capacity, respectively.[6] Once the TCRDF reaches capacity, Fremont's MSW will be hauled to the Altamont Landfill.

[5] California Integrated Waste Management Board (CIWMB), Jurisdictional Profile for City of Fremont. Available at: <http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=C&JURID=167&JUR=Fremont>. Accessed June 16, 2008.

[6] California Integrated Waste Management Board (CIWMB), Jurisdictional Profile for City of Fremont. Available at: <http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=C&JURID=167&JUR=Fremont>. Accessed June 16, 2008.

Electrical and Gas Services

Electrical and gas services in the project vicinity are provided by Pacific Gas & Electric Company (PG&E). Power is generated from various sources, including fossil fuel, hydroelectric, nuclear, wind, and geothermal plants; and is fed into the electrical grid system serving Northern California. PG&E brings electric power into Fremont on overhead transmission lines crossing the City from east to west in an alignment approximately parallel with Durham Road. One set of power lines carries power from the Hetch-Hetchy hydroelectric plant in the Sierra Nevada. These high voltage lines feed into the Newark substation west of Interstate 880 (I-880) near the Auto Mall Parkway and Boyce Road intersection. The Fremont Substation (Paseo Padre Parkway and Grimmer Roads) and the Jarvis substation on Decoto Road in Union City also serve Fremont. Power is transferred down at the two substations and fed into supply lines that transmit electricity throughout Fremont. Existing electrical, gas and telephone facilities are located on the far side of Paseo Padre Parkway, across from the project area.

The main transmission line for natural gas parallels the Nimitz Freeway, with a major pumping station located near I-880 and Durham Road. Gas distribution lines branch off from the main line. Several major PG&E facilities serving Fremont, Newark, and Union City are located near the intersection of Auto Mall Parkway and Boyce Roads, including the Newark substation, a large materials warehouse, a gas meter repair shop, and a service center. A customer service office is also located in Fremont. PG&E contemplates no major changes in electric and gas service to Fremont.[7]

4.15.3 REGULATORY SETTING

State Assembly Bills 610 and 221

The purpose and legislative intent of Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) was to preclude projects from being approved without specific evaluations being performed and documented by the local water provider proving that water is available to serve the project. The laws took effect on January 1, 2002.

SB 610 requires the preparation of a Water Supply Assessment (WSA) for large-scale development projects. The WSA evaluates the water supply available for new development based on anticipated demand. For the broad range of projects which are subject to this law, the statutory WSA must be requested by the lead agency

[7] City of Fremont General Plan 2030. 1991.

from the local water provider at the time the lead agency determines that an EIR is required for the project under the California Environmental Quality Act (CEQA). The water agency must then provide the assessment within 90 days (but may request a time extension under certain circumstances). The WSA must include specific information including an identification of existing water supply entitlements and contracts. The governing board of the water agency must approve the assessment at a public hearing.

SB 221 requires the local water provider to provide "written verification" of "sufficient water supplies" to serve the project prior to approval of a subdivision map. This requires a higher degree of certainty than is required for approval of a WSA.

Project Consistency

In accordance with SB 610, a WSA for the project was prepared by the ACWD for the Patterson Ranch project in April 2008. That WSA serves as the basis for the discussion of water supply impacts in this ~~Recirculated Draft~~Final EIR. Because the project has changed since the October 2009 Draft EIR, conclusions have changed regarding the project's water supply needs. Revised demand estimates were reviewed and approved by ACWD.[8] Under California Government Code §66473.7, the ACWD will be required to issue a written verification ensuring sufficient water supply for the project prior to approval of the project's final subdivision map. ACWD will re-evaluate the assumptions and conclusions of this water supply assessment at that time, and may require additional mitigation measures prior to providing a verification of sufficient water supply.

Assembly Bill 939

Assembly Bill 939 (AB 939), the California Integrated Waste Management Act of 1989, mandated the reduction of solid waste disposal in landfills. The Bill mandated a minimum 50 percent diversion of material from landfills by 2000. Voters of Alameda County, through the Waste Reduction and Recycling Act of 1990 (Measure D), adopted a policy goal to further reduce the total tonnage of materials at landfills generated in Alameda County by 75 percent by 2010. In 1999, Fremont adopted

[8] Niesar, Thomas, ACWD (April 14, 2010) Personal communication with Scott Ruhland, City of Fremont, regarding approval of project water demand estimates.

this policy goal as well. In 2006, 63 percent of Fremont's solid waste was diverted from landfill.[9] (Numbers reported on the FRTS website state that in 2007, nearly 14,000 tons of recyclable material were collected from the residents of the tri-cities (Fremont, Newark, and Union City)).

Project Consistency

The project would generate additional solid waste that could affect Fremont's ability to reach the mandated minimum of 50 percent diversion rate. Mitigation measures related to increased generation of solid waste from the new residential land uses are described in **Section 4.15.3, Impacts and Mitigation Measures**. Implementation of these mitigation measures would assure the project's compliance with AB939 and Measure D.

California's Energy Efficiency Standards for Residential Buildings, Title 24, Part 6, of the California Code of Regulations and California Building Code (Cal Green)

The Energy Efficiency Standards for Residential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 Standards went into effect in January 2010. ~~Projects that apply for a~~ Typically every three years energy efficiency standards are revised and performance requirements are more stringent. It is expected at least one more update would occur prior to the development of the project. Building permits submitted on or after this date must comply with the 2008 Standards. In addition, new minimum green building requirements are included in the most recent California Building Code update and they will be in effect by January 2011.

[9] California Integrated Waste Management Board (CIWMB), Jurisdictional Profile for City of Fremont. Available <http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile1.asp?RG=C&JURID=167&JUR=Fremont>. Accessed June 16, 2008.

State of California Executive Order S-20-04 – The California Green Building Initiative

In December 2004, the Governor of California signed Executive Order S-20-04, which established California's priority for energy and resource-efficient high performance buildings. Executive Order S-20-04 sets a goal of reducing energy use in private commercial and state-owned buildings by 20 percent in 2015, using the nonresidential elements of Title 20 and Title 24 from 2003 as the baseline. Private commercial buildings are also encouraged to be retrofitted, constructed, and operated in compliance with the state's Green Building Action Plan.[10]

Project Consistency

As discussed in the Project Description, the project would incorporate 'green building' and energy saving measures that would be well above the Energy Efficiency Standards of Title 24. The project includes a commitment to 100 points on the Build It Green Checklist, which has a mandatory 15 percent more energy performance requirement, Bay Friendly Landscaping, tankless water heaters and pre-wiring of solar photovoltaic systems with the option for buyers to include complete systems at the time of construction. The project would therefore not conflict with the provisions of Title 24.

4.15.4 IMPACTS AND MITIGATION MEASURES

Significance Criteria

Appendix G of the CEQA Guidelines identifies environmental issues to be considered when determining whether a project could have significant effects on the environment. The project would have a significant public utilities and solid waste impact if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;

[10] The California Green Building Action Plan established the Green Action Team to oversee and direct progress toward the goals of the Governor's Green Building Executive Order S-20-04. The Green Building Action Plan describes the actions that support the Executive Order including recommendations for any additional actions, mandates, or legislation that may be warranted to reduce grid-based energy purchases.

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which would cause significant environmental effects;
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Require new or expanded entitlements for water supplies;
- Substantially deplete groundwater supplies;
- Generate a demand for wastewater treatment that exceeds the capacity of the wastewater treatment provider, when considered in addition to the provider's existing commitments;
- Generate a demand for solid waste disposal that could not be accommodated by the landfill serving the project area; or
- Not comply with federal, state, and local statutes and regulations related to solid waste.

In addition to the criteria above, this section analyzes the project's need to install, upgrade, or relocate other utilities such as telecommunications lines, and power lines.

Section 4.10, Hydrology and Water Quality provides information regarding the project's effect on groundwater recharge, while this section describes the project's impact on the potable water supply, including groundwater. **Section 4.10** also describes the proposed storm drainage facilities for the project and the potential environmental effects related to that system. Please refer to **Section 4.10** of this ~~Recirculated Draft~~Final EIR for a full description of those resources.

Energy significance determinations utilized in this section are based on Appendix F (Energy Conservation) of the CEQA Guidelines. A significant impact will occur if implementation of the project would:

- Result in a wasteful, inefficient and unnecessary use of energy; or
- Result in a significant demand on regional energy supply or requirements of substantial additional capacity.

Issues Not Discussed Further

Wastewater Treatment Requirements

Wastewater generated by the project would originate from residential sources and no industrial wastewater would be generated by the project. New sewer lines would be constructed onsite to accommodate the project-generated flows, which would be typical of residential areas, and no changes to the wastewater treatment plant would be required to treat these flows. Consequently, no impacts related to Regional Water Quality Control Board's wastewater treatment requirements for the regional wastewater treatment plant would be expected. Therefore, this issue is not discussed further in this section.

Telecommunication Lines

Highly regulated private companies provide telecommunication systems within Fremont. Fremont's Municipal Code regulates the provision and service standards of these telecommunication services and zoning regulations mandate the installation of new telecommunication systems (including telephone lines). No deficiencies in telecommunications service in the vicinity of the project, or that would be caused by the project, have been identified by the telecommunication companies.

Construction of Facilities

Domestic Water System

Design of the domestic water system would be subject to the standards and review of the ACWD. Water would be served primarily through an internal network of gridded and looped 8-inch and 12-inch water mains. Water service to the project area would require at least two off-site connections to nearby existing public mains to provide for system looping. Off-site connections include:

- Existing water main in Ardenwood Boulevard;
- Existing water main in Bardolph Circle.

A third connection, across or under Alameda and Crandell Creeks, that would connect to the existing water main in Lowry Road, is also possible. At this time, the exact location and methods of this off-site connection is unknown and will be determined upon further consultation with ACWD. If this is required, a supplemental environmental evaluation of this action would be conducted.

~~The USD has indicated that a~~A recycled water trunk line ~~will be~~is planned to be extended along Union City Boulevard and Ardenwood Boulevard from the ~~Union City~~Alvarado Treatment Plant in Union City to the project area. It is not known exactly when this will occur. To accommodate this system, a new ~~"dry"~~ recycled water pipeline would be constructed in Ardenwood Boulevard, and a new ~~"dry"~~ recycled water pipeline would be constructed on-site and used in the future to irrigate selected landscaped areas. The recycled transmission pipeline may be required to extend from Paseo Padre Parkway to north of Alameda Creek. However, at this time it is not known whether this crossings needs to occur and therefore this action would undergo separate environmental review if it is required by ACWD.

USD Pump Station

The project sponsors intend to donate a 1-acre parcel of land for the future construction of a new USD pump station. The proposed location of the pump station is at the southwest corner of the intersection of Ardenwood Boulevard and the Alameda Creek Flood Control Channel. The need for the pump station is not related to this project and will be constructed separately by USD, hence it is not included as part of this ~~Recirculated Draft~~Final EIR, nor is it part of the project. The pump station is scheduled for construction between ~~2018~~ 2019 and ~~2019~~2020.

Access to ACWD and USD Facilities

ACWD currently uses the Alameda County Regional Trail and Patterson Ranch Road to access a number of ACWD monitoring wells, located west of the project area. Implementation of the project would not obstruct or block the regional trail or Patterson Road and would therefore maintain access to ACWD's facilities. The project would also include USD access to the pump station through the 10-acre religious facilities site.

Types of Solid Waste

The project consists of residential land uses that would not result in the generation of unique types of solid waste that would conflict with existing regulations applicable to solid waste disposal. The project would be required to comply with Fremont's solid waste disposal requirements, including recycling or special materials disposal programs to comply with the provisions of AB 939 and Measure D (see **Impact PU-4** below for more detail regarding this topic). This issue is not discussed further in this section.

Project Impacts

Impact PU-1: The project would generate wastewater volumes that would increase service demands from the USD for wastewater treatment and wastewater conveyance. (Less than Significant)

A utility plan was submitted to the USD showing the location and types of sanitary sewer systems proposed to serve the project area. The utility plan indicates that a larger pipe size would be used to enable crossing under the storm drain systems. Sewer laterals are proposed to be 4-inches in diameter and a minimum of 5.5 feet deep at the property line. Although the multi-family units under Scenario 2 would generate less wastewater per unit than a single-family home, the operation of more overall residential units (520 units) would result in higher wastewater generation rates under Scenario 2 than Scenario 1. As such, Scenario 2 was used in this analysis because presents a more conservative estimate of wastewater generation. As shown in **Table 4.15-7, Union Sanitary District Wastewater Generation Rates for Scenario 2**, Scenario 2 would generate a total of approximately 0.131 mgd of wastewater daily based on wastewater generation rates reported by the USD. Scenario 1 would generate 0.128 mgd of wastewater, 0.003 mdg less than Scenario 2.

Table 4.15-7 Union ~~Sanitation~~ Sanitary District Wastewater Generation Rates for Scenario 2

Development Type	Generation Rate Gallons Per Day (gpd)	Projected Wastewater Million Gallons Per Day (mgd)
448 Single Family Detached Units	247 per unit	0.111
72 Multi-Family Units	218 per unit	0.016
36,000 ft^2 Religious facilitya	0.10 per ft^2	0.004
Total Projected Demand (mgd)		*0.131*

Notes: Scenario 1 would generate 0.128 mgd of wastewater

a For the purposes of this analysis, this ~~Recirculated Draft~~Final EIR assumes that the religious facilities would total approximately 36,000 ft^2

Source: Union ~~Sanitation~~ Sanitary District 2008; CirclePoint 2010.

After performing a preliminary review of the proposed plans, the USD confirmed that the local sanitary sewer lines and treatment plant currently have sufficient capacity to accommodate the development proposed by the project.[11] Currently, the USD treats an average of 28 mgd and has a total capacity of 38 mgd available to serve future growth. The project would add 0.13 mgd, increasing the volume of wastewater treated to approximately 28.13 mgd and decreasing the remaining capacity to 9.87 mgd. The USD confirmed that the project would not require the construction of a new wastewater treatment plant or new offsite wastewater mains, or the expansion of existing mains.[12] Therefore, the project would have a less than significant impact related to wastewater.

The project area is not currently within the jurisdictional boundaries of the USD. New projects within the USD service area need to be annexed to the USD before service can be provided. Annexations are performed through the Alameda County Local Agency Formation Commission, and may take between six months to a year to finalize.[13]

Impact PU-2: Implementation of the project could increase the magnitude of future water supply shortages in the ACWD service area under critical dry year and multiple dry year conditions. (Significant)

Due to the configuration of ACWD's water production facilities and the interconnective nature of the ACWD's distribution system, the project area receives water supplies from all three primary sources of supplies, and would not be dependent on any single source of supply.[14] Under the dry year scenarios ACWD plans to utilize all water supplies and no excess supplies would be available to meet the project's demands. The project's dry year water supply impacts (Scenario 1 or Scenario 2) could be mitigated by the acquisition of additional recovery capacity from the District's existing participation in the Semitropic Groundwater Banking Program. As described previously, ACWD has secured off-site groundwater banking storage capacity in excess of that identified in its 1995 IRP. However, the ability of

[11] The USD reviewed the wastewater generation rates for the October 2009 Draft EIR. Because Scenario 2 of this ~~Recirculated Draft~~Final EIR would generate less wastewater, the USD local sewer lines and treatment plant would still be able to accommodate the development.

[12] Personal communication with Rollie Arbolante, P.E., Senior Engineer, USD

[13] Personal communication with Rollie Arbolante, P.E., Senior Engineer, USD

[14] Alameda County Water District (ACWD). 2008 (April). Water Supply Assessment (WSA) for Patterson Ranch Development Project.

ACWD to recover stored water from the Semitropic is constrained by a contractual maximum during critically dry years. Securing additional recovery capacity, beyond ACWD's current amount, would allow ACWD to recover additional banked water in dry years, thereby mitigating the dry year impacts of the proposed project.

Mitigation Measure PU-2: Funding of Additional Groundwater Banking.

The project proponent shall fund the acquisition (by ACWD) of additional recovery capacity of dry year supplies from the Semitropic Groundwater Banking Program (Semitropic). Under the existing banking agreements with Semitropic, ACWD is limited to a maximum recovery rate of 13,500 af/yr during critically dry years. The purchase of up to 300 af/yr (currently estimated at approximately $150,000) of additional capacity to accommodate the necessary increase in recovery capacity, would mitigate shortage impacts during dry year conditions and multiple dry year conditions caused by the project. Because ACWD is already participating in the Semitropic program, and the banking program is fully permitted and operational, no new permits will be required for ACWD to increase its Semitropic recovery capacity by 300 af/yr. Prior to payment of funds for additional Semitropic capacity, ACWD shall further refine estimated demands to account for water savings of the any revised project design and ACWD conservation programs.

If Semitropic recovery capacity is not available for purchase at the time the project moves forward, or if ACWD determines that capacity purchased from Semitropic is not sufficiently reliable in dry years, then ACWD will require an alternative mitigation, with equivalent savings in water use or increase in water supply, to mitigate the impact of the project on dry year water supply. Alternative mitigation may include: (1) the acquisition of a new water supply, and/or (2) investment in district-wide conservation programming (above and beyond that which is planned by ACWD).

Significance after Mitigation: Less than Significant

As shown in **Table 4.15-5**, ACWD already experiences a shortage of water supply in critically dry years. Implementation of this mitigation measure would ensure ~~that~~ the purchase of up to 300 af/yr of additional capacity from Semitropic and ACWD could also require additional mitigation including the acquisition of new water supply and/or investment in district-wide conservation programming. These measures would reduce the impact to a less-than-significant level. ~~would have sufficient water supply under critical dry and multiple dry year conditions. Purchase of up to 300 af/yr of additional capacity from Semitropic would reduce the potential impacts to a less-than-significant level~~.

Impact PU-3: Implementation of the project would increase the demands on the District's potable water system. (Significant)

Development of the project (Scenario 1 or Scenario 2) was not accounted for in ACWD's 2006-2010 UWMP and therefore would generate new additional demand on ACWD water supplies. However, the project demand was accounted for in Fremont growth projections and long-term demand planning for the entire City since the project area was designated as an Urban-Reserve-Study Area in the City's General Plan. The Urban Reserve-Study Area designation anticipated future conversion to urbanized use subject to additional analysis. Provision of water by ACWD to the project area would require specific improvements as part of the project design to help accommodate the project demand within the long-range planning of water supply by ACWD.

~~The Union Sanitary District has indicated that a~~A recycled water trunk line ~~will be~~is planned to be extended from the ~~Union City~~Alvarado Treatment Plant in Union City to the project ~~site~~area, along Union City Boulevard and Ardenwood Boulevard, including the crossing of Alameda Creek. Although the exact timing of the trunk line extension is unknown, to accommodate this system when it is, the project includes construction of a portion of the pipeline in Ardenwood Boulevard. This pipeline would be used to serve the project with potable water through connections with the potable water distribution system until recycled water becomes available. At this time, the size of the pipeline has not been determined, however the ~~12-inch "dry"~~ recycled waterline in Ardenwood Boulevard is expected to be between 12- and 18-inches and ~~a 6-inch "dry"~~the recycled water pipeline on-site for ultimate connection to this trunk line is expected to be at least 6-inches.

Mitigation Measure PU-3a: Recycled Water Distribution System.

The project will be required to accommodate the future use of recycled water by installing a separate, non-potable distribution system (i.e. "purple pipe") for landscape irrigation needs of all parks, ~~schools,~~ religious facilities, and other large areas with irrigated landscaping. This non-potable distribution system shall extend to all irrigated landscape areas throughout the project and connect to the new recycled water transmission pipeline ~~to be installed by USD~~. In the interim period before recycled water becomes available, this separate irrigation distribution system may be supplied by potable water from ACWD's distribution system. Final project utility plans will be required to show the proposed recycled water piping within the planned streets. Adequate clearances from other utilities and improvements in accordance with State and ACWD standards will be required. Given the required clearance for utilities, changes to the project layout and/or street widths may be necessary in order to accommodate

the recycled water system along with the other utility systems needs to serve the project. The future use of recycled water for landscaping and irrigation will substantially reduce the potable water demands of the project.

~~The USD has indicated that a~~A recycled water trunk line ~~will~~ is planned to be extended along Union City Boulevard from the ~~Union Sanitary District~~Alvarado Treatment Plant in Union City to the project area. It is not known exactly what entity (USD, ACWD, or other) will install the pipeline or when this will occur. To accommodate this system, a new ~~"dry"~~ recycled water pipeline would be constructed in Ardenwood Boulevard, and a new ~~"dry"~~ recycled water pipeline would be constructed on-site and used in the future to irrigate selected landscaped areas. These pipelines would be used to serve the project area with potable water through connections with the potable water distribution system until recycled water becomes available. The recycled transmission pipeline may be required to extend from Paseo Padre Parkway to north of Alameda Creek; however the project would not create the need for this extension. However, at this time it is not known whether this crossings needs to occur and therefore this action would undergo separate environmental review if it is required by ACWD.

Mitigation Measure PU-3b: Implement Water Conservation Measures throughout the Project.

The project proponent shall use the latest technologies in water efficient plumbing design and installation, plumbing fixtures and irrigation systems in both residential and non-residential development. Water efficient plumbing fixtures include high efficiency toilets, dishwashers, clothes washers, water heaters, showerheads, and faucet aerators. Water efficient irrigation systems include weather-based irrigation-controllers and drip irrigation systems for non-turf areas.

The landscape design of all neighborhood parks and landscaped areas shall be prepared in accordance with Bay Friendly Landscape Guidelines, which include best management landscaping practices that conserve water. Bay Friendly Landscape Guidelines water conservation strategies include:

- Minimum 75 percent use of native and drought tolerant plant material;
- Installing a maximum 10 percent of total front yard and private park areas as irrigated lawn;
- Installation of recycled water and/or ~~graywater~~ greywater collection systems;

- Installing dedicated meters to monitor landscape water use; and
- Conformance with the City's Water Efficiency ~~Lanscape~~ Landscape Ordinance.

Significance after Mitigation: Less than Significant

This mitigation, in addition to the implementation of **Mitigation Measure PU-2**, presents methods to ensure that water is conserved throughout the project, thereby helping to accommodate the increased demand on ACWD's potable water system. Implementation of these water conservation measures, coupled with the purchase of additional groundwater banking, will reduce the impact to a less-than-significant level.

Impact PU-4: The proposed residential development would generate additional solid waste, which could affect Fremont's ability to meet the requirements of AB939 related to the reduction of solid waste disposal. (Significant)

The proposed residential development (Scenario 1 or Scenario 2) would generate additional solid waste, which could affect Fremont's ability to meet the requirements of AB939 related to the reduction of solid waste disposal. Implementing the General Plan policies that relate to solid waste would help to reduce the effects of growth and development on solid waste facilities to a less-than-significant level. These policies require Fremont to achieve and maintain a 50 percent reduction in solid waste disposal through source reduction, reuse, recycling, and composting. As discussed previously, since 2006, Fremont has successfully diverted 63 percent of collected solid wastes to recyclers, and plans to reach a 75 percent diversion rate goal by 2010.

The Fremont Recycling and Transfer Station was constructed to provide capacity for the next 20-30 years, and is operating below capacity. Numerous landfills currently accommodating Fremont are operating below capacity. Due to the successful waste reduction, recycling and composting programs implemented by Fremont, the landfills currently accommodating Fremont are expected to have sufficient capacity for the additional solid waste generated by the project. Fremont is required by law (AB939) to plan for sufficient disposal capacity to account for the waste generated in the City for a 15-year period.

The following mitigation would help Fremont meet its solid waste diversion plans by reducing the project's contribution to solid waste disposal.

Mitigation Measure PU-4: Develop a Solid Waste Disposal Plan.

Prior to the issuance of building permits, the project sponsor shall provide the Fremont Environmental Services Division a Solid Waste Disposal Plan that identifies measures to be implemented to achieve 75 percent waste reduction/diversion goals. The solid waste disposal plan shall include the following:

- During construction, builders and all subcontractors shall seek to reduce the amount of waste materials generated by reusing and recycling building materials as required by City law, 100 percent of the asphalt and concrete must be reused or recycled. Additionally, at least 50 percent of the remaining construction debris must be reused or recycled. Before the issuance of building permits, the project shall submit a Construction & Demolition Debris Waste Handling Plan per the City's Waste Handling Guidelines, which shall specify which materials will be reused, recycled or landfilled during the construction of the project. The plan shall identify each type of debris item and provide the name of each facility/service provider to be used for the proper disposal or recycling of these items. Recycling procedures will include recycling metals, lumber, asphalt, concrete, roofing materials, corrugated cardboard, wallboard, and floor treatments. It is recommended that contractors separate and store reusable building materials on site. The plan must receive approval by Integrated Waste Management staff prior to building permit issuance. After the construction of the project is complete, a Final Debris Diversion and Disposal Report will be required by Fremont.[15]
- In accordance with Fremont's Waste Handling Guidelines (2009) (mandated by Fremont's Municipal Code), the project shall include adequate, accessible areas for collecting and loading recyclable materials. Final building plans shall include provisions for both interior and exterior storage areas for recyclables, subject to City review prior to final project approval. Project plans that clearly delineate these areas shall be submitted to the Planning Department for review and approval prior to issuance of a building permit.

[15] City of Fremont. 2009 (August). Waste Handling Guidelines.

- The HOAs shall be responsible to ensure that the collection of all recycle bins and their proper disposal is conducted on a consistent and timely basis. New residents shall be informed and receive orientation information and/or informational literature regarding available recycling practices and procedures. This shall also include organic waste composting.

Prior to the issuance of building permits to Fremont, the project sponsor must prove that the proposed Solid Waste Disposal Plan achieves a 75 percent waste reduction/diversion goal.

Significance after Mitigation: Less than Significant

Implementation of this mitigation measure would ensure compliance with AB 939, which requires a city to plan for sufficient waste disposal capacity for a 15-year period. This measure includes the development of a solid waste disposal plan that would achieve a 75 percent reduction or diversion in waste. The plan includes recycling and reuse during construction activities, ample and conveniently located recycling bins, and consistent and timely collection of recycling materials. This mitigation would reduce the potential impact from an increase in the generation of solid waste to a less-than-significant level.

Impact PU-5: The project would result in increased use of gas and electricity and would increase the demand on regional energy supply, but would not result in wasteful energy use. (Less than Significant)

Scenario 1 would result in the construction of 500 single-family residential units. Energy would be consumed throughout the construction and operation of the project. Based on the electricity consumption rates in the CEC report discussed above, Scenario 1 would have an energy demand of 4.0 million kW per year.[16]

The project includes the incorporation of green building techniques to reduce project energy use. These green building techniques are not accounted for in the 4.0 million kW of energy demand, but would reduce the project's demand for energy. The proposed development agreement would require all residential buildings to be constructed to a minimum of 100 points per the GreenPoint Checklist or of an acceptable equivalent as deemed acceptable by the City of Fremont. The project would also apply for verification through the Green Point Rater program. In addition to these green building practices, all single-family homes

[16] Scenario 2 would demand 3.8 million kW per year of energy: (8,117 kW per year per single family residential unit x 448 single family residential units) + (3,451 kW per year per multi-family residential unit x 72 multi-family residential units) = 3.8 million kW per year Less traffic too, roughly 30 % less ADT, but also a population of 1/3 less 2 to 2.5 per MF unit versus 3 per home.

would be pre-wired and pre-plumbed and structurally designed for solar water heaters and solar (photovoltaic) panels. Home buyers would be given the opportunity to have solar panels and solar water heaters installed during construction.

The project would include the following additional green building techniques which would lessen the demand for energy:

- The project would incorporate renewable energy systems, such as pre-plumbing for tankless hot water heating and the installation of photovoltaic panels.
- The project would install water and energy efficient appliances and lighting fixtures, including *EnergyStar* dishwashing and refrigeration equipment.

As discussed previously, electrical and gas services would be provided by PG&E. The Municipal Code regulates the provision and service standards of the PG&E's services. No deficiencies in electrical and gas service in the vicinity of the project, or that would be caused by the project, have been identified by PG&E. Additionally, the green building techniques described above would reduce the project's potential to use energy in a wasteful manner. Therefore, the project's impact on energy would be less than significant.